

**WEST**

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L1: Entry 2 of 20

File: DWPI

Apr 3, 2000

DERWENT-ACC-NO: 2000-317172

DERWENT-WEEK: 200034

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TITLE: Metal carbene complexes useful in the facilitation of chemical reactions  
are new

INVENTOR: HUANG, J; NOLAN, S P

PATENT-ASSIGNEE:

ASSIGNEE

CODE

UNIV NEW ORLEANS FOUND

UYNEN

PRIORITY-DATA:

1999US-0115358

January 8, 1999

1998US-0099722

September 10, 1998

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
AU 9958175 A	April 3, 2000	N/A	000	B01J031/00
WO 200015339	March 23, 2000	E	046	B01J031/00 A1

DESIGNATED-STATES: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD  
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA  
ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE  
SL SZ UG ZW

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-NO
AU 9958175A	September 9, 1999	1999AU-0058175	N/A
AU 9958175A	N/A	WO 200015339	Based on
WO	September 9, 1999	1999WO-US20629	N/A 200015339A1

INT-CL (IPC): B01J 31/00; C07C 13/00; C07F 9/02; C07F 15/00

ABSTRACTED-PUB-NO: WO 200015339A

BASIC-ABSTRACT:

NOVELTY - A catalytic complex comprises a metal atom, one anionic ligand, one nucleophillic carbene ligand, a further ligand and a carbon-containing ligand, all ligands ligated to the metal.

DETAILED DESCRIPTION - A catalytic complex comprises a metal atom selected from ruthenium and osmium, at least one anionic ligand, at least one nucleophillic carbene, a further ligand and a carbon-containing ligand which consists of alkylidene, benzylidene, indenylidene, vinylidene or allenylidene, all ligands ligated to the metal. INDEPENDENT CLAIMS are also included for the following:

(A) a method of making a nucleophillic carbene comprises:

(a) contacting an optionally substituted aniline(preferably 2,4,6-trimethylaniline, especially 2,6-diisopropylaniline) with an approximately one-half equimolar amount of paraformaldehyde under an inert atmosphere to make a first reaction mixture.

(b) heating the first reaction mixture until/paraformaldehyde dissolves,

(c) adding an approximately one-half equimolar amount of a dialkoxyacetaldehyde to make a second reaction mixture and

(d) heating second reaction mixture for a time and under conditions sufficient to make a nucleophilic carbene which is then hydrogenated to produce a non-aromatic nucleophilic carbene.

(B) a method of performing ring closing metathesis comprises contacting a diterminal diene with a catalytic complex for a time sufficient to produce a cyclic alkene.

USE - In the facilitation of chemical reactions, including applications in the pharmaceutical industry, fine chemical synthesis and the synthesis of polymers.

ADVANTAGE - (I) is thermally stable, has high reaction rates and is air and moisture stable.

CHOSEN-DRAWING: Dwg.0/12

TITLE-TERMS: METAL CARBENE COMPLEX USEFUL FACILITATE CHEMICAL REACT NEW

DERWENT-CLASS: A17 E11 E12

CPI-CODES: A02-A06; E05-G; E05-M; E05-N; E10-J02A1; N05-A; N06-E;

CHEMICAL-CODES:

Chemical Indexing M3 \*01\*

Fragmentation Code

M411 M510 M520 M521 M530 M533 M540 M543 M640 M710  
M720 M730 M904 M905 N209 N224 N242 N243 N261 N301  
N305 N309 N333 N353 N426 N480 N513 Q421

Specific Compounds

AlPO4C AlPO4N AlPO4P

Chemical Indexing M3 \*02\*

Fragmentation Code

A544 A923 A930 A940 A970 B515 B720 B743 B770 B813  
B831 C017 C100 C720 C801 C803 C804 C805 C806 C807  
F011 F012 F013 F523 G017 G019 G030 G039 G100 G563  
G599 H142 H202 H721 M126 M129 M144 M210 M211 M214  
M232 M240 M250 M280 M281 M283 M710 M720 M730 M905  
N209 N224 N242 N243 N261 N301 N305 N309 N333 N353  
N426 N480 N513 Q421

Specific Compounds

AlPO5C AlPO5N AlPO5P

Chemical Indexing M3 \*03\*

Fragmentation Code

A544 A676 A923 A930 A940 A950 A960 A970 B415 B711  
B712 B713 B720 B741 B742 B743 B770 B813 B831 C000  
C100 C106 C107 C108 C216 C720 C801 C802 C803 C804  
C805 C806 C807 F000 F011 F012 F013 F014 F015 F431  
F522 F523 G001 G002 G010 G011 G012 G013 G019 G020  
G021 G022 G029 G040 G100 G111 G112 G113 G221 G299  
H103 H141 H142 H181 H182 H201 H202 H211 H212 H401  
H441 H481 H521 H522 H541 H542 H581 H582 H598 H711  
H712 H713 H714 H715 H716 H721 H722 H723 H731 J011  
J012 J013 J014 J171 J211 J212 J221 J222 J271 J272

J273 J371 K431 K442 K499 K820 K850 K899 L463 L499  
L660 L750 M113 M115 M119 M121 M122 M123 M124 M125  
M129 M131 M132 M136 M137 M139 M141 M149 M150 M210  
M211 M212 M213 M214 M215 M216 M220 M221 M222 M223  
M224 M225 M226 M231 M232 M233 M240 M250 M262 M271  
M272 M273 M280 M281 M282 M283 M311 M312 M313 M314  
M315 M316 M320 M321 M322 M323 M331 M332 M333 M340  
M342 M343 M349 M351 M361 M391 M392 M393 M411 M510  
M520 M521 M530 M531 M532 M533 M540 M620 M630 M640  
M650 M710 M720 M730 M904 M905 N209 N224 N242 N243  
N261 N301 N305 N309 N333 N353 N426 N480 N513 Q421  
Markush Compounds  
200016-25402-C 200016-25402-N 200016-25402-P

## Chemical Indexing M3 \*04\*

## Fragmentation Code

A544 A676 A923 A930 A940 A950 A960 A970 C000 C100  
C720 C801 C802 C803 C804 C805 C806 C807 F011 F012  
F013 F014 F015 F019 F522 F523 F599 G001 G002 G010  
G011 G012 G013 G019 G020 G021 G022 G029 G040 G100  
G111 G112 G113 G221 G299 H141 H142 H143 H181 H182  
H183 H201 H202 H203 H211 H212 H213 H401 H441 H481  
H521 H522 H523 H541 H542 H581 H582 H711 H712 H713  
H714 H715 H716 H721 H722 H723 H731 J011 J012 J013  
J014 J171 J211 J212 J221 J222 J271 J272 J273 K431  
K820 K850 K899 L463 L499 L660 M113 M115 M119 M121  
M122 M123 M124 M125 M126 M129 M131 M132 M136 M137  
M139 M141 M144 M149 M150 M210 M211 M212 M213 M214  
M215 M216 M220 M221 M222 M223 M224 M225 M226 M231  
M232 M233 M240 M250 M262 M271 M272 M273 M280 M281  
M282 M283 M311 M312 M313 M314 M315 M316 M320 M321  
M331 M332 M333 M340 M342 M343 M349 M351 M361 M391  
M411 M510 M520 M522 M530 M531 M532 M533 M540 M620  
M630 M640 M650 M710 M720 M730 M904 M905 N209 N224  
N242 N243 N261 N301 N305 N309 N333 N353 N426 N480  
N513 Q421

## Markush Compounds

200016-25403-C 200016-25403-N 200016-25403-P

## Chemical Indexing M3 \*05\*

## Fragmentation Code

A544 A676 A923 A930 C000 C100 C710 C720 F011 F012  
F013 F014 F015 F522 F523 G001 G002 G010 G011 G012  
G013 G015 G019 G020 G021 G022 G029 G031 G032 G040  
G100 G111 G112 G113 G211 G221 G299 G310 H141 H142  
H181 H182 H201 H202 H211 H212 H401 H441 H481 H521  
H522 H541 H542 H581 H582 H711 H712 H713 H714 H715  
H716 H721 H722 H723 H731 J011 J012 J013 J014 J171  
J211 J212 J221 J222 J271 J272 J273 K431 K820 K850  
K899 L463 L499 L660 M1 M113 M115 M119 M121 M122  
M123 M124 M125 M126 M129 M131 M132 M136 M137 M139  
M141 M144 M149 M150 M210 M211 M212 M213 M214 M215  
M216 M220 M221 M222 M223 M224 M225 M226 M231 M232  
M233 M240 M250 M262 M271 M272 M273 M280 M281 M282  
M283 M311 M312 M313 M314 M315 M316 M320 M321 M331  
M332 M333 M340 M342 M343 M349 M351 M361 M391 M411  
M510 M521 M531 M532 M533 M540 M640 M710 M720 M730  
M904 M905 N209 N224 N242 N243 N261 N301 N305 N309  
N333 N353 N426 N480 N513 Q421

## Markush Compounds

200016-25404-C 200016-25404-N 200016-25404-P

## Chemical Indexing M3 \*06\*

## Fragmentation Code

C316 F011 F013 F014 F422 G010 G100 H2 H211 K0

K3 K353 M210 M211 M240 M282 M320 M413 M510 M521  
M531 M540 M720 M904 M905 N209 N213 N222 N305 N313  
N321 N442 N513  
Specific Compounds  
A1PN7K A1PN7P

## Chemical Indexing M3 \*07\*

Fragmentation Code  
G036 G038 G552 J0 J012 J2 J252 M210 M211 M212  
M240 M272 M282 M320 M415 M510 M520 M530 M541 M720  
M904 M905 N209 N213 N222 N303 N313 N321 N442 N513  
Specific Compounds  
A1PN8K A1PN8P

## Chemical Indexing M3 \*08\*

Fragmentation Code  
G036 G038 G562 J0 J012 J2 J252 M210 M211 M212  
M240 M272 M282 M320 M415 M510 M520 M530 M541 M720  
M904 M905 N209 N213 N222 N303 N313 N321 N442 N513  
Specific Compounds  
A1PN9K A1PN9P

## Chemical Indexing M3 \*09\*

Fragmentation Code  
G060 G640 J0 J011 J2 J251 M210 M212 M272 M281  
M320 M415 M510 M520 M530 M541 M720 M904 M905 N209  
N213 N222 N304 N313 N321 N442 N513  
Ring Index  
01391  
Specific Compounds  
A1PNAK A1PNAP

## Chemical Indexing M3 \*10\*

Fragmentation Code  
G060 G640 J0 J011 J2 J251 M210 M212 M272 M281  
M320 M415 M510 M520 M530 M541 M720 M904 M905 N209  
N213 N222 N304 N313 N321 N442 N513  
Ring Index  
01391  
Specific Compounds  
A1PNBK A1PNBP

## Chemical Indexing M3 \*11\*

Fragmentation Code  
G036 G038 G572 J0 J012 J2 J252 M210 M211 M212  
M240 M272 M282 M320 M415 M510 M520 M530 M541 M720  
M904 M905 N209 N213 N222 N303 N313 N321 N442 N513  
Specific Compounds  
A1PNCK A1PNCP

## Chemical Indexing M3 \*12\*

Fragmentation Code  
C316 F011 F450 G013 G100 H2 H211 K0 K3 K353  
M210 M211 M240 M281 M320 M413 M510 M521 M531 M540  
M720 M904 M905 N209 N213 N222 N305 N313 N321 N442  
N513  
Ring Index  
00414  
Specific Compounds  
A08I9K A08I9P

## Chemical Indexing M3 \*13\*

Fragmentation Code  
D011 E460 J5 J521 L9 L922 M280 M320 M412 M511  
M520 M530 M540 M720 M904 M905 N209 N213 N222 N306

N313 N321 N442 N513  
Specific Compounds  
A1PNDK A1PNDP

## Chemical Indexing M3 \*14\*

Fragmentation Code  
D011 D012 E460 J5 J521 L9 L922 M210 M211 M240  
M281 M320 M412 M511 M520 M530 M540 M720 M904 M905  
N209 N213 N222 N306 N313 N321 N442 N513  
Specific Compounds  
A1PNEK A1PNEP

## Chemical Indexing M3 \*15\*

Fragmentation Code  
F012 F130 J5 J521 L9 L942 M280 M320 M413 M510  
M521 M530 M540 M720 M904 M905 N209 N213 N222 N305  
N313 N321 N442 N513  
Ring Index  
00561  
Specific Compounds  
A08IFK A08IFP

## Chemical Indexing M3 \*16\*

Fragmentation Code  
F012 F450 J5 J521 L9 L941 M280 M320 M413 M510  
M521 M530 M540 M720 M904 M905 N209 N213 N222 N305  
N313 N321 N442 N513  
Ring Index  
00587  
Specific Compounds  
A08INK A08INP

## Chemical Indexing M3 \*17\*

Fragmentation Code  
F012 F130 J5 J521 L9 L942 M280 M320 M413 M510  
M521 M530 M540 M720 M904 M905 N209 N213 N222 N305  
N313 N321 N442 N513  
Ring Index  
45348  
Specific Compounds  
A1PNFK A1PNFP

## Chemical Indexing M3 \*18\*

Fragmentation Code  
G000 G050 G551 G552 G561 G562 M280 M320 M415 M510  
M520 M530 M541 M610 M720 M904 M905 N209 N213 N222  
N303 N313 N321 N442 N513  
Markush Compounds  
200016-25401-K 200016-25401-P

## ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; P0000 ; L9999 L2506\*R Polymer Index [1.2] 018 ; ND02 Polymer Index [1.3] 018 ; C999 C168 Polymer Index [1.4] 018 ; D01 Ru 8B Tr Os D11 D10 D12 D18\*R D52 D51 D54 D55 D61\*R D63 D66 D68 D69 D23 D22 D32 D31 D75 D45 D59 D81 D82 D83 D84 D85 D86 D87 D88 D89 D90 D91 D92 D93 D94 D95 D19 D18 D76 F07\*R F34 F89 F41 F50 F52 F63 F23 F00 F93 F70 F94 7A\*R N\* 5A P\* O\* 6A F62 D21 D27 D58 D70 ; C999 C000\*R ; C999 C248 ; K9723 ; K9632 K9621 Polymer Index [1.5] 018 ; D01 D31 D76 D50 D89 D11 D10 D19 D18 F08 F07 ; C999 C157 Polymer Index [1.6] 018 ; D01 D11 D10 D19 D18 D23 D22 D33 D75 D76 D45 D53 D51 D59 D66 D94 F09 F07 ; C999 C157 Polymer Index [1.7] 018 ; D01 D35 D57 D61\*R D95 D70 F50 Cl 7A Ru 8B Tr D12 D10 D14 D13 D55 D51 ; C999 C157

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-095874

**WEST**☐ Generate Collection

L1: Entry 2 of 20

File: DWPI

Apr 3, 2000

DERWENT-ACC-NO: 2000-317172  
DERWENT-WEEK: 200034  
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TITLE: Metal carbene complexes useful in the facilitation of chemical reactions  
are new

INVENTOR: HUANG, J; NOLAN, S P

## PRIORITY-DATA:

1999US-0115358

January 8, 1999

1998US-0099722

September 10, 1998

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
AU 9958175 A	April 3, 2000	N/A	000	B01J031/00
WO 200015339	March 23, 2000	E	046	B01J031/00 A1

INT-CL (IPC): B01J 31/00; C07C 13/00; C07F 9/02; C07F 15/00

ABSTRACTED-PUB-NO: WO 200015339A

## BASIC-ABSTRACT:

NOVELTY - A catalytic complex comprises a metal atom, one anionic ligand, one nucleophilic carbene ligand, a further ligand and a carbon-containing ligand, all ligands ligated to the metal.

DETAILED DESCRIPTION - A catalytic complex comprises a metal atom selected from ruthenium and osmium, at least one anionic ligand, at least one nucleophilic carbene, a further ligand and a carbon-containing ligand which consists of alkylidene, benzylidene, indenylidene, vinylidene or allenylidene, all ligands ligated to the metal. INDEPENDENT CLAIMS are also included for the following:

(A) a method of making a nucleophilic carbene comprises:

(a) contacting an optionally substituted aniline (preferably 2,4,6-trimethylaniline, especially 2,6-diisopropylaniline) with an approximately one-half equimolar amount of paraformaldehyde under an inert atmosphere to make a first reaction mixture.

(b) heating the first reaction mixture until paraformaldehyde dissolves,

(c) adding an approximately one-half equimolar amount of a dialkoxyacetaldehyde to make a second reaction mixture and

(d) heating second reaction mixture for a time and under conditions sufficient to make a nucleophilic carbene which is then hydrogenated to produce a non-aromatic nucleophilic carbene.

(B) a method of performing ring closing metathesis comprises contacting a di-terminal diene with a catalytic complex for a time sufficient to produce a cyclic alkene.

USE - In the facilitation of chemical reactions, including applications in the pharmaceutical industry, fine chemical synthesis and the synthesis of polymers.

ADVANTAGE - (I) is thermally stable, has high reaction rates and is air and moisture stable.

ABSTRACTED-PUB-NO:

WO 200015339A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/12